

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
29 December 2004 (29.12.2004)

PCT

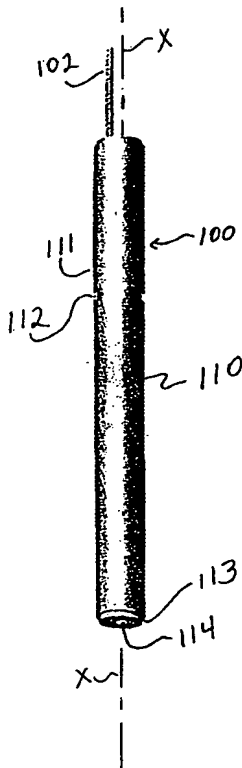
(10) International Publication Number  
**WO 2004/113870 A2**

- (51) International Patent Classification<sup>7</sup>: **G01N**
- (21) International Application Number: **PCT/US2004/019402**
- (22) International Filing Date: **17 June 2004 (17.06.2004)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data:  
**60/479,276** **18 June 2003 (18.06.2003)** **US**
- (71) Applicant (for all designated States except US): **THE JOHNS HOPKINS UNIVERSITY [US/US]; 34th and Charles Streets, Baltimore, MD 21218 (US).**
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **KUES, Henry, A. [US/US]; 7075 Bridge Court, Eldersburg, MD 21784 (US).**
- (74) Agents: **COOCH, Francis, A. et al.; The Johns Hopkins University, Applied Physics Laboratory, 11100 Johns Hopkins Road, Laurel, MD 20723-6099 (US).**
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): **AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.**
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): **ARIPO (BW, GH,**

[Continued on next page]

(54) Title: **TIME DOMAIN RESOLVING CHEMICAL SAMPLER USING SORBENT MATERIAL**

(57) Abstract: A fluid sampling device is provided comprising an elongated housing having a longitudinal axis, a plurality of alternating sorbent units and spacer units disposed longitudinally through the housing and slidably movable therethrough along the longitudinal direction, and means for individually and sequentially exposing the sorbent units to a fluid. The adsorbed components can then be desorbed and analyzed to provide composition data of target compounds in a fluid, e.g., a gas, over a period of time.





GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— *without international search report and to be republished upon receipt of that report*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*